

**The Institution of Engineers, Australia; Sydney Division
Engineering Heritage Committee**

ORAL HISTORY PROGRAM

INTERVIEWEE: Douglas Roy Ebeling

TAPE NUMBERS:

IEA SYD RR: 102

IEA SYD RR: 103

INTERVIEWER: Richard Raxworthy

INTERVIEW DATE: 11.11.1995

NUMBER OF TAPES: 2

RESTRICTION ON USE: None

INTERVIEW TAPE LOG

This interview took place in Sydney, on 11 November, 1995.

This interview is part of the Oral History Project of the Engineering Heritage Committee
of the Sydney Division the Institution of Engineers, Australia.

**This interview is part of the Oral History Project of the Engineering Heritage Committee
of the Sydney Division the Institution of Engineers, Australia.**

Tape Log

Counter: Tape Run Time (minutes)

Tape: IEA SYD: 102, Side A		
TIME	SUBJECT	NAMES & KEYWORDS
0.51	Start of Tape	
1.09	Douglas Roy Ebeling, date of birth 1929	Douglas Roy Ebeling
1.45	Early days in Yarraville, Footscray area	Yarraville West Primary School
2.12	Yarraville West Primary	
	Father - manufacturer, marine engineer	
	Manufacturer of Ebeling street sweepers	'Ebeling' street sweepers
4.24	Footscray Technical College (later Footscray University of Technology) - 2 Diplomas - Mechanical and Electrical	Footscray Technical College
4.36	Melbourne University - Bachelor of Mechanical Engineering	Footscray University of Technology
	Notable lecturers - Laszlo, (Hungarian) - strength of materials	Melbourne University
	Jim Holdaway,	Laszlo
	Doug Lees - lecturer in Honours year	Jim Holdaway
	Water polo team - Jaap Houtsma (captain)	Doug Lees
		Jaap Houtsma (Dr)
7.15	First job with ICI - plant development in explosives plant	ICI Deer Park
8.57	Developed nitroglycerine pump, and survived	
10.39	Jet pump design	
11.24	Explosions in the plant	
14.21	Acid plant improvement	
15.18	To England for experience - transfer to Wilton nylon plant design project	Wilton, UK
16.45	Then to Harwell - (atomic energy) - interview	Harwell
	To learn reactor design for Lucas Heights Project. (Close copy of DIDO reactor, not yet commissioned)	Watson Munro, Owen Pulley,
	Bill Roberts in charge of HIFAR reactor project	Bill Roberts
	(High Flux Australian Reactor)	HIFAR, Lucas Heights
19.15	Decision to establish Atomic Energy Commission and build reactor, by R. G. Menzies	DIDO
19.45	Built in 18 months	R. G. Menzies
20.45	Case for a new reactor - Slatcher Committee, ASTEC report	Atomic Energy Commission
		Cliff Dalton, chief engineer
21.51	Construction of containment vessel	ASTEC
22.15	HIFAR a very efficient project	Slatcher Committee
22.33	Head Wrightson, (UK) , contractors	
23.27	End of Side A	Head Wrightson (UK)

Tape Log

Tape : IEA SYD : 102, Side B		
TIME	SUBJECT	NAMES & KEYWORDS
1.18	Start of Side 2	
1.54	To Lucas Heights design office, under Don George, mainly to design experimental equipment.	Don George
2.24	Designing Dounreay Flasks for shipping spent fuel elements to Scotland for reprocessing.	Dounreay Sir Phillip, Baxter
3.36	Shipping flasks to England on 'Nella Dan' - only shipment ever sent	'Nella Dan' - Antarctic research vessel
4.54	Fuel usage in reactor	
6.00	Designing and building the spent fuel storage facility at Lucas Heights.	
7.00	Contents of spent fuel.	
8.24	Windscale and Handford reactors.	Windscale
8.45	Windscale accident in UK (1956).	Handford
10.15	'Hot cells' for holding experimental materials - most compact in the world - made of 'heavy concrete' using steel punchings from Macphersons.	Hot Cells Macphersons Limited
12.00	1962 - promotion to head of Design Section. Maintenance and engineering staffing and work.	
13.03	Health Physics Section established.	Health Physics Section
13.51	'Permutit' Water purification / mineralisation system	Permutit
15.30	Constructing neutron beam collimator.	Collimator
16.00	Repairs to cooling coils.	
18.27	Death of Owen Pulley - acting as Chief of Engineering Research Division.	Owen Pulley
19.21	Initiating research projects for materials testing - instability in cooling water flows.	
20.15	Arrival of new chief, Kim Ford - responsible to Keith Alder.	Kim Ford, Keith Alder
20.36	Design surveys for Jervis Bay power plant project - teams to Canada (Candu - natural uranium) and to Risley in UK (steam generating heavy water reactor). Desire to have natural uranium reactor (Phillip, Baxter).	Jervis Bay Candu Risley, UK Sir Phillip Baxter
21.42	Consideration of fast breeder reactors.	
22.09	Uranium a very common mineral.	
22.24	Effects of radon gas - health effects.	
22.39	Problems in study tour of UK - sabotage at Winforth Heath - interview with Chief Inspector Eden of Scotland Yard.	Winforth Heath Chief Inspector Eden of Scotland Yard
24.00	End of side 2	

Tape: IEA SYD : 103, Side A		
TIME	SUBJECT	NAMES & KEYWORDS
1.06	Start of side 3	
1.24	Chief suspect in sabotage of reactor.	
3.24	Visit to Romania –Hans Kronberger (a 'Dunera' boy!)	Hans Kronberger
5.00	Formal dinner - playing the national anthem - Waltzing Matilda	'Dunera'
6.24	Design study for graphite moderated steam-generating graphite reactor - cheaper than heavy-water moderated design, but not as Stable.	
7.42	Visit from MI5 - accused of 'stealing' the Russian design - RMBK	Chernobyl
9.36	design used at Chernobyl.	
10.42	Return home - Jervis Bay reactor project cancelled by government (project ready to pour foundations).	Jervis Bay
11.21	Cancellation due to cheaper price of coal-generated electricity.	
11.54	Centrifuge project to develop plant to value-add to uranium by enrichment.	Keith Alder
	Beginning from near zero information - centrifuge design concept by Gernot Zippe.	Gernot Zippe
	Beams in USA - bigger, clumsier design.	Virginia University
	Developing successful prototype plant elements.	Beams
17.00	After 15 years and 50 million dollars, project closed by Hawke government	Hawke Government
18.00	Building a working centrifuge cascade, and a cascade monitoring system - authorised by Bill Hayden.	Bill Hayden
19.15	Technical excellence is no match for politics.	
20.09	Becoming Chief of Engineering Research.	
20.18	Study of seismic effects in Sydney area.	
20.39	Start of Lucas Heights Technology Park.	
	In retirement - consulting projects:	CRA zinc plant, Cockle Creek
21.21	CRA - study of power generation using waste heat from zinc plant	NSW
22.06	Study of laser enrichment techniques	
22.18	Metz - study of Westinghouse Electric reactor in Philippines	Metz
		Westinghouse Electric
		Marcos
23.15	Idea for improvement of water tube boilers.	
23.39	End of side 3	
		IE Aust Oral History Program

Tape: IEA SYD : 103, Side B		
TIME	SUBJECT	NAMES & KEYWORDS
1.27	Start of Side 4	
1.42	Development study of water tube boilers (Michael Clarke, of Metz). Using ceramic burner designed by ANSTO - project for AGL. Grant from ERDIC (Energy Research Corporation, Canberra). Project going on - aiming at minimum 50% radiant heat.	Michael Clarke, METZ ANSTO AGL ERDIC (Energy Research Corporation, Canberra)
5.45	Chair of IE (Aust) Nuclear Engineering Panel.	IE (Aust) Nuclear Engineering Panel
6.39	Solar energy developments and options.	
8.30	China planning to build large number of nuclear power stations.	
9.21	Use of medical and industrial radio-isotopes from Lucas Heights.	Technetium
10.42	Sterilisation plants.	
11.06	Future of food irradiation.	Food irradiation
11.42	Other IE Aust activities.	
12.06	Comments on Moruroa tests	Moruroa
14.48	End of side 4	
	End of Interview	